

SOUVENIR
20th Anniversary
Central Marine Fisheries Research Institute
(Government of India)



ISSUED BY
THE ORGANISING COMMITTEE C. M. F. R. I. RECREATION CLUB
MANDAPAM CAMP

Pearl and Chank Fisheries - A New Outlook in Survey and Fishing

BY K. NAGAPPAN NAYAR AND S. MAHADEVAN

Central Marine Fisheries Research Institute

The Gulf of Mannar and the Palk Bay Zones of the east coast of the Madras state, particularly the area from Rameshwaram to Manapad, are of very great fishing importance as far as the pearl and chank fisheries are concerned. The submarine plateau of the inshore areas of the sea here affords excellent habitat for the growth of the shell fish, *Xarcus pyrum* (Linn.) (the sacred chank) and *Pinctada fucata* (Gould) (the pearl oyster). Chank fishing and pearl fishing in this zone had been conducted from time immemorial under the control of the State. All along the stretch of the sea-bottom, extensive, flat rocky patches occur at a distance of 8-12 miles from the shore within 7-12 fathoms, separated from one another and surrounded by equally extensive patches of fine sandy areas at the same or slightly deeper zones. Whereas the chanks prefer fine and soft sandy areas called locally 'Poochi-manal' or 'pirals' as their abode, the oysters are sedentary and are attached to hard rocky substrata called 'Paar'. Occasionally the one is found in the natural habitat of the other. There are more than 65 well known 'Paars' (rocky sea-bottom) and lesser in number of good chank grounds in the Gulf of Mannar known to fisherman by their depth and location fixed by land bearings. The sea bottom on Palk Bay side is not rocky, at the same time less shallow also. The chanks growing in this zone are classified as 'Patti' variety which is priced less than the 'Jadhi' variety fished from Rameshwaram to Tiruchendur. The differentiation between these two lie in the latter being elongate, elegantly formed, comparatively narrower and with well balanced spire whereas the former is with a short spire. The Tirunelveli and Ramanathapuram chanks now constitute the bulk to meet the demand from Bengal for chank bangle industry. The price of chank offered was Rs. 160/- per thousand about sixty years ago but now it amounts to more than Rs. 1500/- per thousand. The annual catch delivered at Tuticorin alone ranges from 6 - 10 lakhs while chanks delivered at Kilakarai, Rameshwaram, Tondi, etc., may all be equally high if not more. In addition to the chank fishery which is an annual feature, pearl fishery off Tuticorin was also conducted in recent years, after a gap of 27 years. There have been successive pearl fishing since 1955 to 1961 and annually it brought a revenue of a few lakhs of rupees to Madras Government and to the world market several lakhs of rupees worth of oriental pearls. The pearl and chank fisheries are unique in the southern zone of the east coast of India and, therefore, deserve our special attention in the rational exploitation of the stocks so as to regulate the yield and reap these hidden treasures of the sea.

The chanks and oysters are fished by the age old skin diving. Excellent passages on skin diving practised in India are seen in the writings of a few fishery scientists but special mention should be made of the classic writings of late Mr. James Hornell. The craft and accessories used for fishing both chanks and pearl oysters are identical.

The fishing season depends on the locality. Fishing by skin diving is possible only in clear waters for obvious reasons. During the period extending from November to middle of May the Palk Bay water is turbid while Gulf of Mannar is calm and its water clear. The

conditions from June to October are congenial for Palk Bay fishing since gulf of Mannar becomes rough and turbid at this time. Skin diving is done by expert divers drawn from the districts of Ramanathapuram, Tirunelveli and Kanyakumari.

Viewed in the perspective of modernization or mechanization of shell fishing techniques to improve the lot of the diving professional, the introduction of modern diving apparatus in the commercial exploitation of the fishery becomes essential. The present skin-diving method can be effectively replaced. An expert skin-diver is capable of remaining underwater for just over a minute at a depth of 11 fathoms. Beyond this no regular skin diving is practised at present. This is one of the limitations of the diving. Any account of skin diving will be incomplete without relating the dangers to which the diver is exposed once he professes to dive. Apart from his own folly, the inherent dangers of the sea poses the problems of life and death to him. Shark bites, sting of the scorpion fishes and ray fish spines, stings of jelly fishes etc. are some of the agonies experienced by him. The introduction of modern diving equipments like the 'Self contained underwater breathing apparatus' (SCUBA) or Aqua-lung has come in handy and are being extensively used in foreign countries by divers in the place of skin diving practice. The use of this equipment together with fins for swimming and face mask for vision, not only increases the efficiency of the divers but also lessens many of the dangers enumerated above. The diver can clearly see the animals at the bottom and avoid dangerous animals. Naturally, the need of the present day is to train the divers in this modern method of diving. The Aqua-lung is very safe in diving up to 25 fathoms and normally a good diver can remain underwater for nearly 45 minutes at a time. Some of the unexplored regions beyond 11 fathoms can be commercially exploited by remaining longer under water facilitated by compressed air used in the aqua-lung. The diver, once he is trained in the usage of these, will find it easy to avoid cumbersome and elaborate procedures and routines. The skin divers at present reach the fishing grounds only by means of sail boat and so far no mechanized boat has been used by them for this purpose. This is a big handicap for them since on calm days they have to depend on towage by Government or private launches for reaching the grounds. Even on reaching the place, movement from place to place in search of chanks or oysters as the case may be is rendered a physically tiresome job. Physical exhaustion to divers hampers their efficiency in diving. In this context mechanization of their craft also becomes imperative. During the off season they can usefully carry out normal fishing with the mechanized vessels thus serving a double purpose.

Already steps have been taken by the Union Government to popularize the mechanized fishing boats among the fishermen and to train scientists and professional divers in the use of Aqua-lung. There are expert, young Indian biologists at Tuticorin well versed in this technique having been trained with the help of F. A. O. Rome. A batch of professional divers has been also trained. It is hoped that other biologists and divers will take the opportunity to learn the modern diving techniques and put them to practice. The Government for their part will help in importing sufficient equipments with the help of F. A. O. and popularize them once the divers show a positive response. There is little doubt that the day is not far off when the divers engaged in pearl oyster and chank fishing will have their own mechanized boats and Aqua-lung sets and equipment.

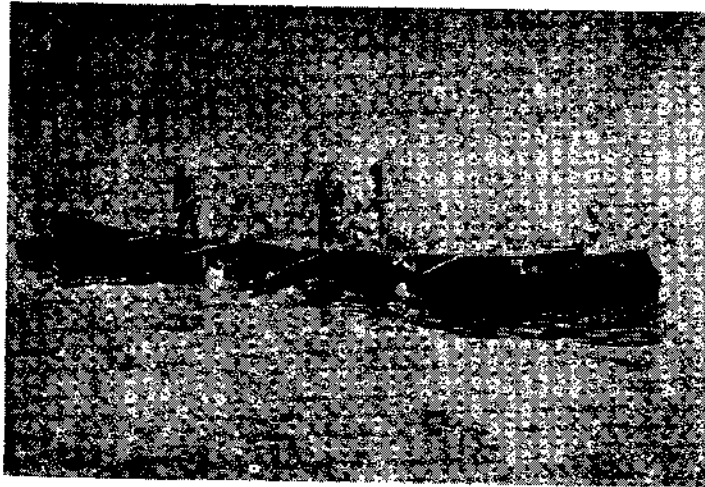
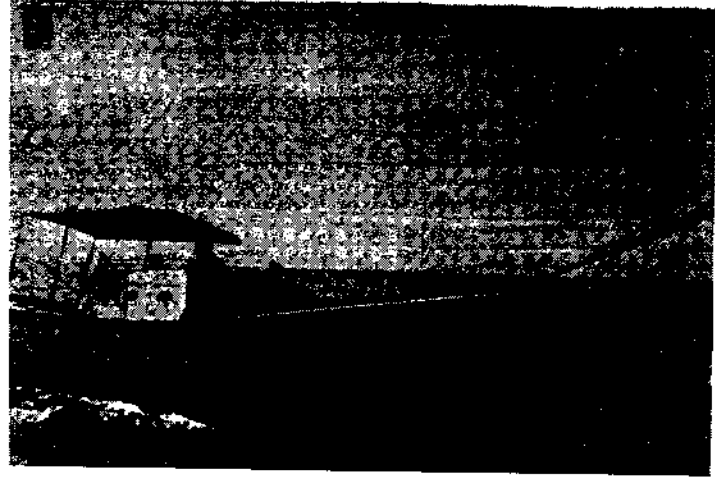
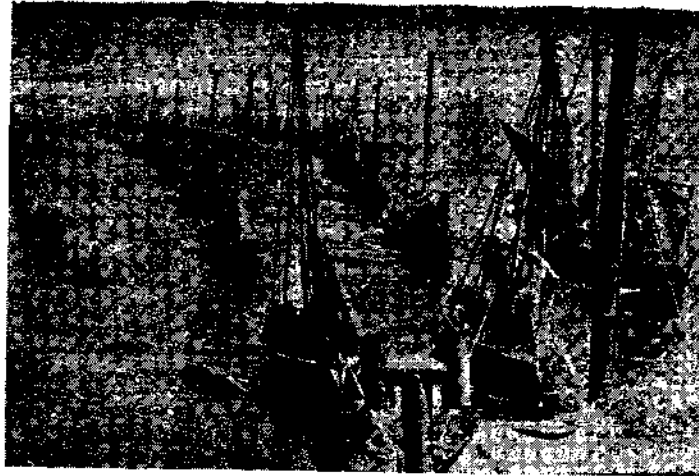


PLATE I. 1. Canoes engaged in chank fishing being towed to the fishing ground by motor launch. 2. Skin diving for chanks by local divers. 3. Mechanised boat recommended for diving with aqua lung. 4. Aqua-lung diving by a scientist.

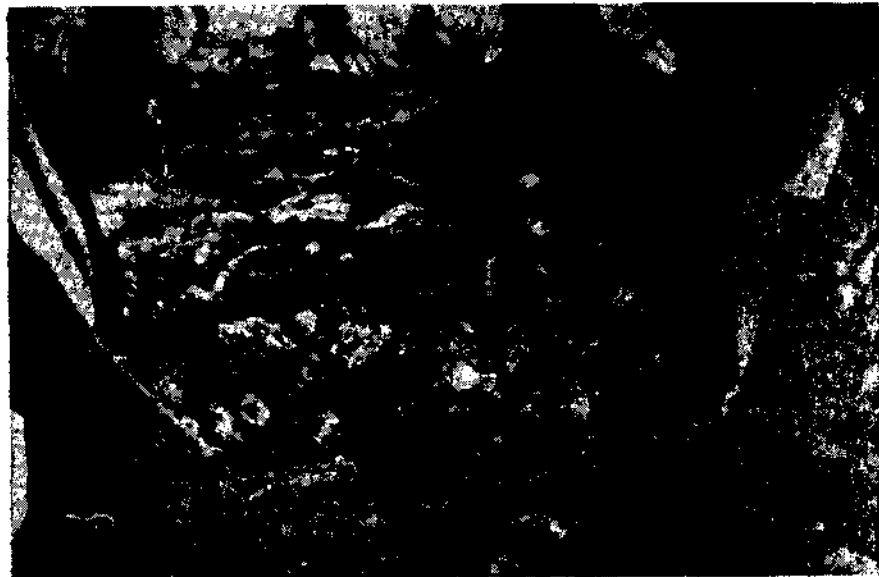


PLATE II. 1. Sacred chank (dextral type)
2. Pearl oysters